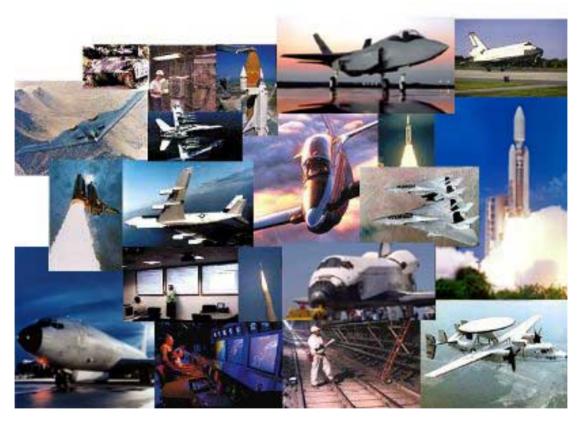
wInsight Web Services & Portal Integration



Nicholas Pisano C/S Solutions, Inc. (850) 269-3260



C/S Solutions Overview

- Founded May 1993
- Founders in Business Area for Over Twenty Five Years
- Primarily a "Shrink Wrap" Software Firm
- Core Products Shipping Since 1994
 - Stable
 - Mature
 - Strong Reputation for Quality
- C/SSI Tools used on the Vast Majority of Government Programs
- Entire Staff has Extensive Project Management Background



Market

- Business Intelligence Tools for Project Management (PM)
 - Business Areas Currently Include Cost, Schedule & Risk Management
 - Market is Growing due to OMB Circular A-11 and the Sarbanes-Oxley Act
 - Close Partnerships with Leading Vendors of Underlying Cost and Schedule Systems
 - AMS Real-Time
 - ARES Corp
 - Artemis
 - Business Engine
 - Microsoft

- Oracle
- Primavera
- SAP
- Welcom



Competition

- Underlying Cost & Schedules Tools have some "Limited Functionality" in our Area
- Where we Differentiate
 - Ease of Use
 - Power of Tools
 - Quality of Tools
 - Integration with MS Windows
 - Web Delivery/Web Services
 - Portal Integration
 - Flexible Electronic Data Transfer/Consolidation
 - Designed from "Ground-Up" to Enhance Communication between Supplier and Customer
 - Large Government Customer Base (i.e., ACAT1, DCMA, DAU, etc.)
 - Large Industry Customer Base



Statistics of wInsight Users

- Numbers
 - Hundreds of Sites
 - Over 40,000 users worldwide
- Types of Users
 - Government (30%)
 - Aerospace Industry (55%)
 - Other (15%)
 - IT
 - Telecommunications
 - Construction
 - Mining
 - Oil

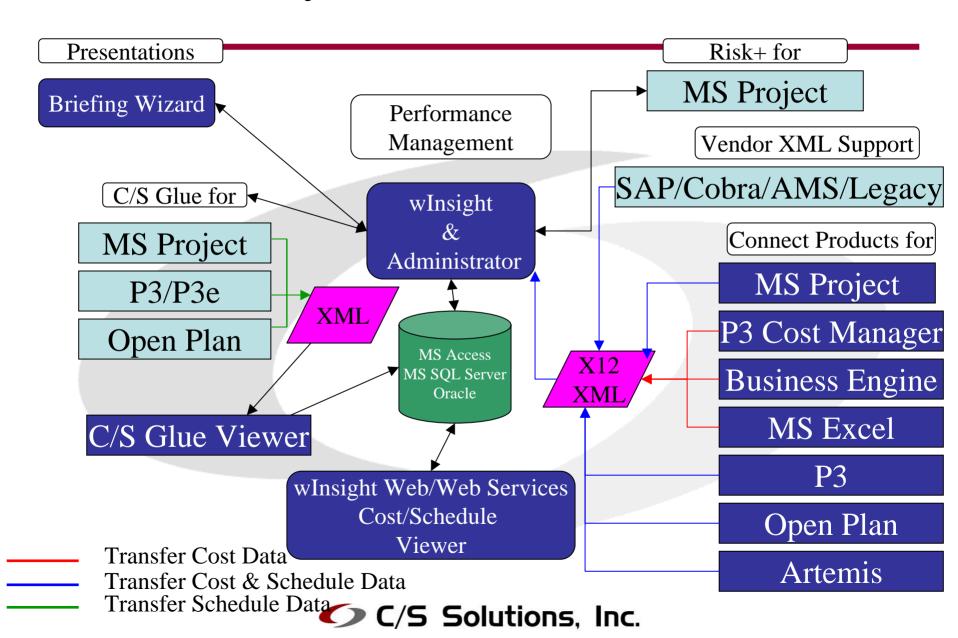
- Where
 - United States (97.5%)
 - United Kingdom (.5%)
 - Australia (1.0%)
 - Other (1.0%)
 - Canada
 - Japan
 - Hong Kong
 Boeing
 - Spain
 - Italy
 - South America

Sample wInsight Customers

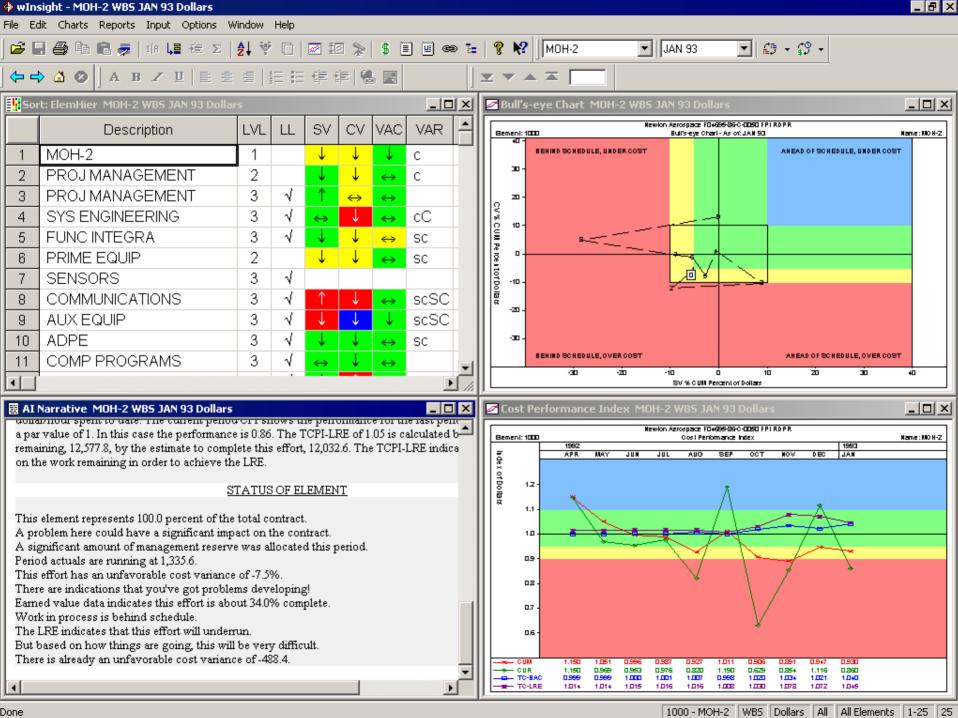
- Aerospace Firms
 - Boeing
 - Lockheed Martin
 - Raytheon
 - BAE
 - Northrop Grumman
 - General Dynamics
 - Pratt & Whitney
 - United Defense
 - L3
 - CSC
 - SAIC
 - Others

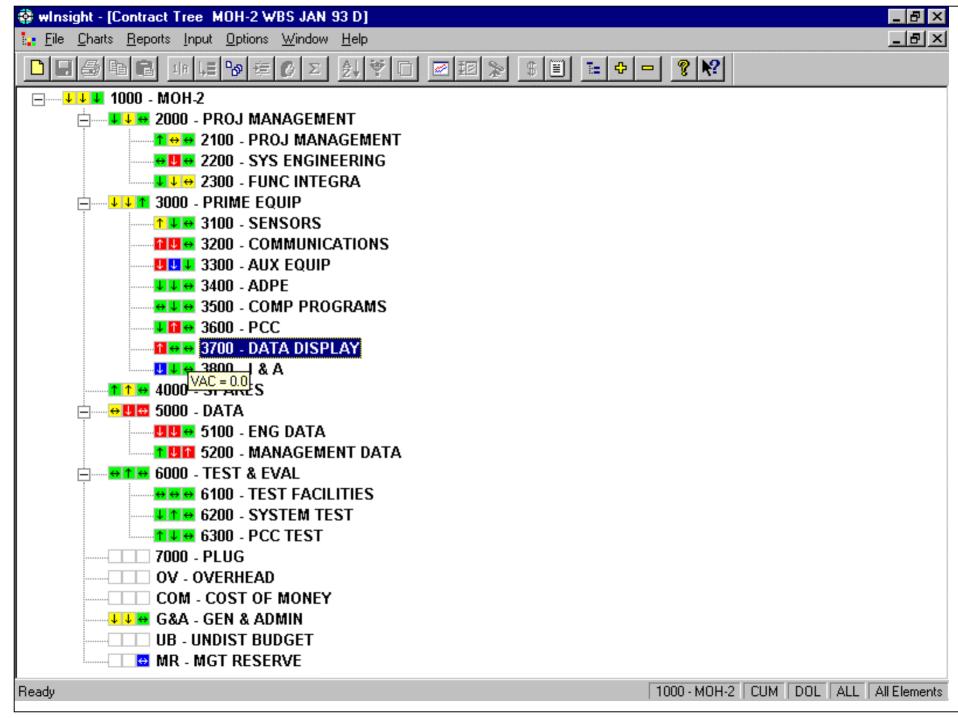
- Government
 - US Air Force
 - US Army
 - US Navy
 - NASA
 - IRS
 - FBI
 - FAA
 - NRO
 - DOE
 - NSA
 - Australian MOD
 - Others

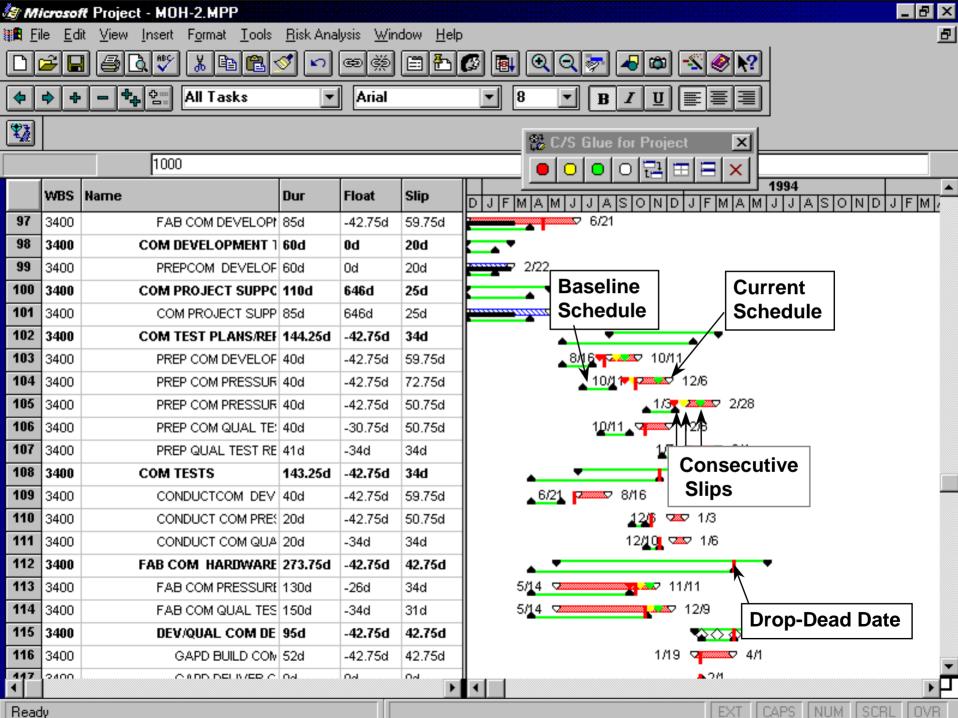
System Overview

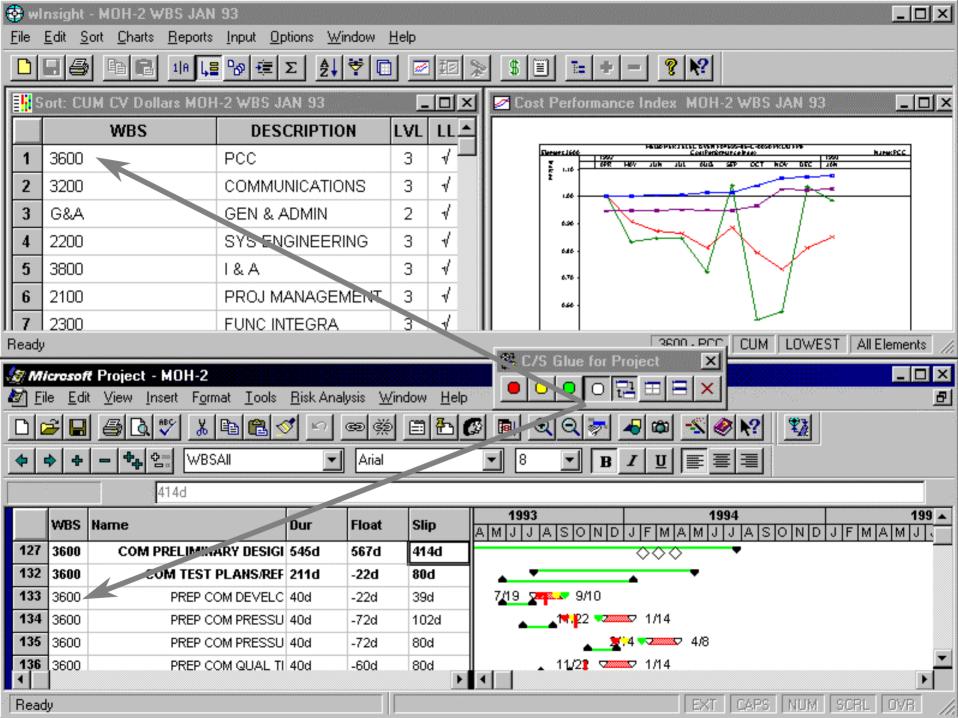


Screen Snapshots of Desktop Applications



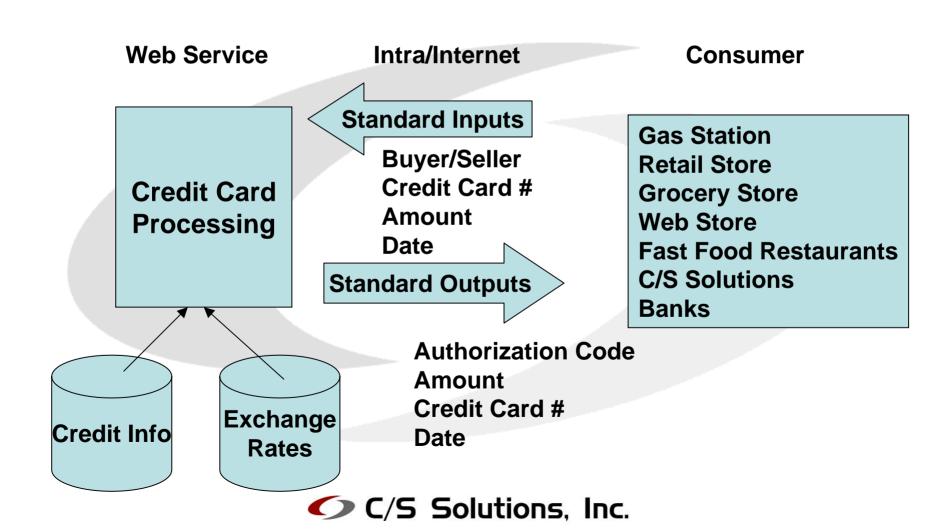




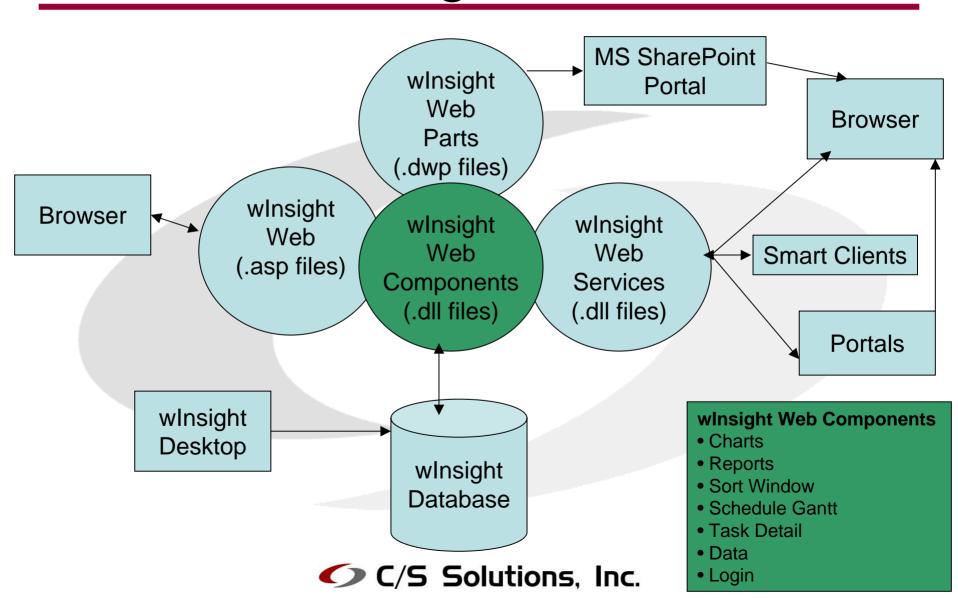


wInsight Web Services

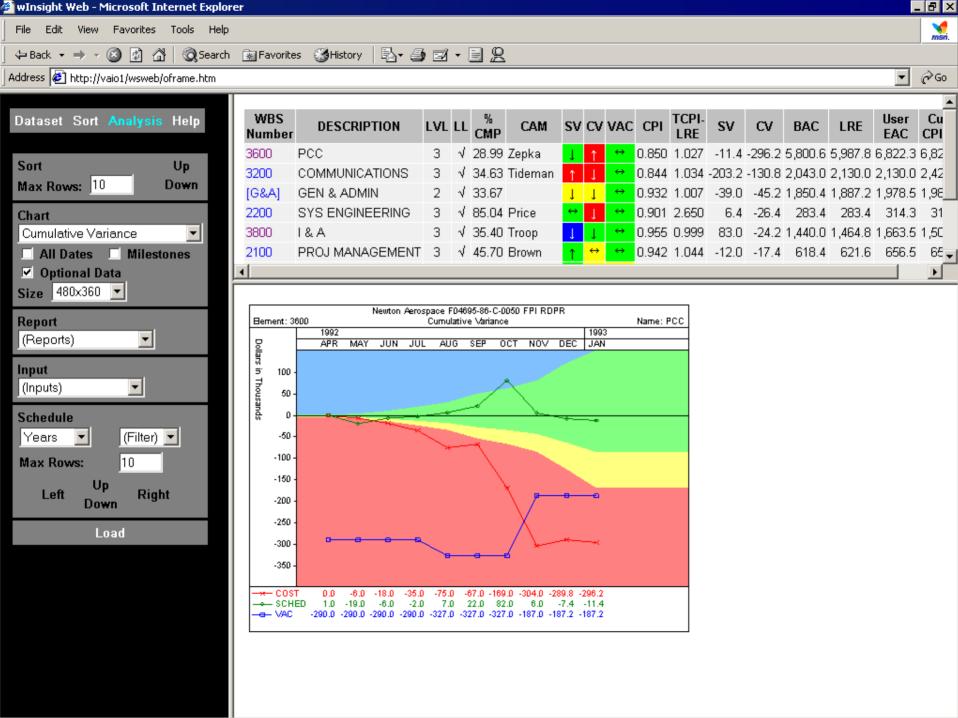
Sample Web Service

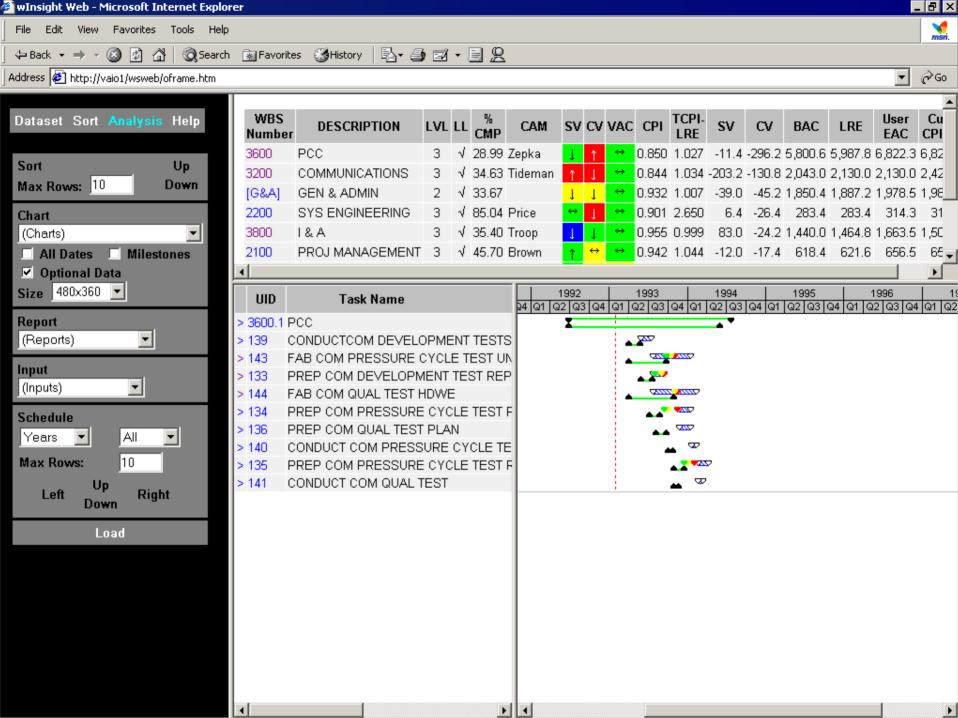


wInsight Web



Web Centric Applications





Key Portal Benefits

- Single User Interface to Access Key Program Data from all Management Systems
- Manages Content Layout by Individual and/or Group
- Can Optionally Manage Security
- Can be Used for Integration of "Best of Breed" Systems
- Provides Collaboration Tools
 - Document Management
 - Calendars
 - Discussion Groups
 - Alerts
 - Etc.

Line of Business Program Management Metrics

Earned Value

- CPI & SPI performance trend data
- Statistical performance forecast & program EAC
- Modern tools allow program managers to focus on cost & schedule variances by severity at any level of the WBS

Schedule Performance

 Critical path analysis and disciplined start/finish metrics provide a foundation for validating earned value performance

Requirements

- Tracking to closure by milestone all requirement TBD & TBRs

Risk Management

- Continuous assessment of risk consequence and likelihoods
- Detailed review of Burn-down and "off-ramp" planning for "red" risk items

Line of Business Program Management Metrics

• Financials & staffing status

 NBAE, EBIT, Cash, Orders, Capital, Overhead and EP Staffing time-phased plan & actuals

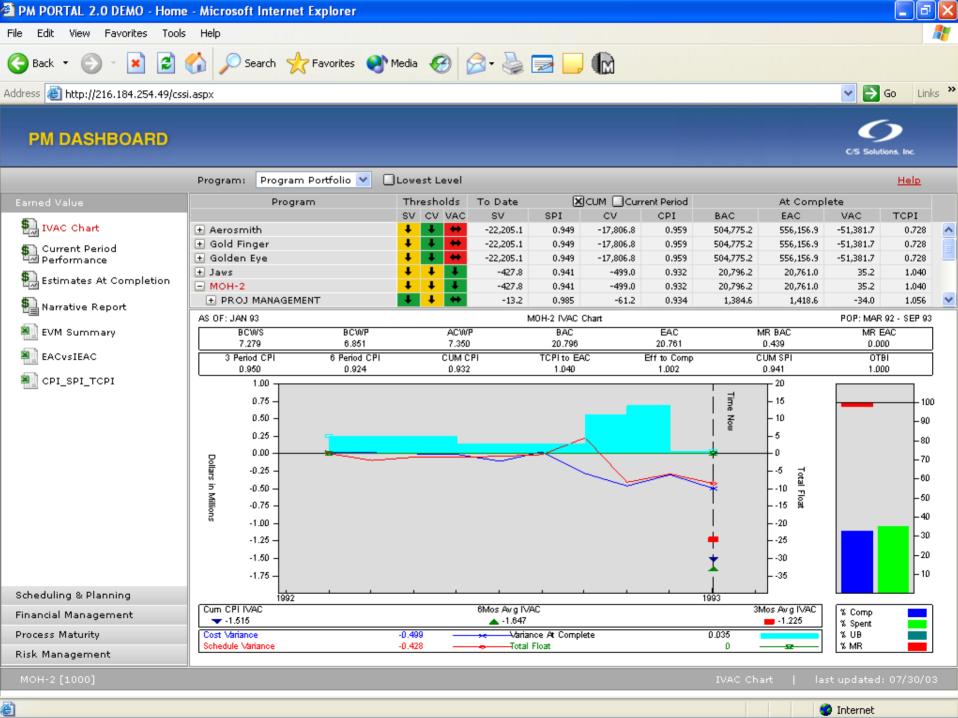
Customer Satisfaction

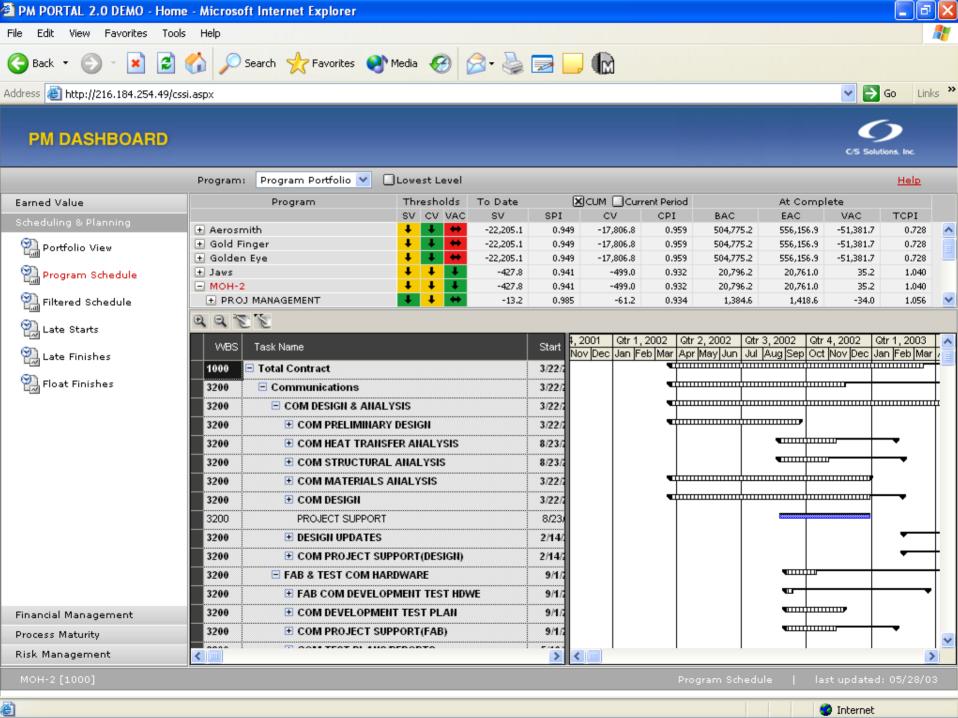
CPAR & Award Fee performance & tracking

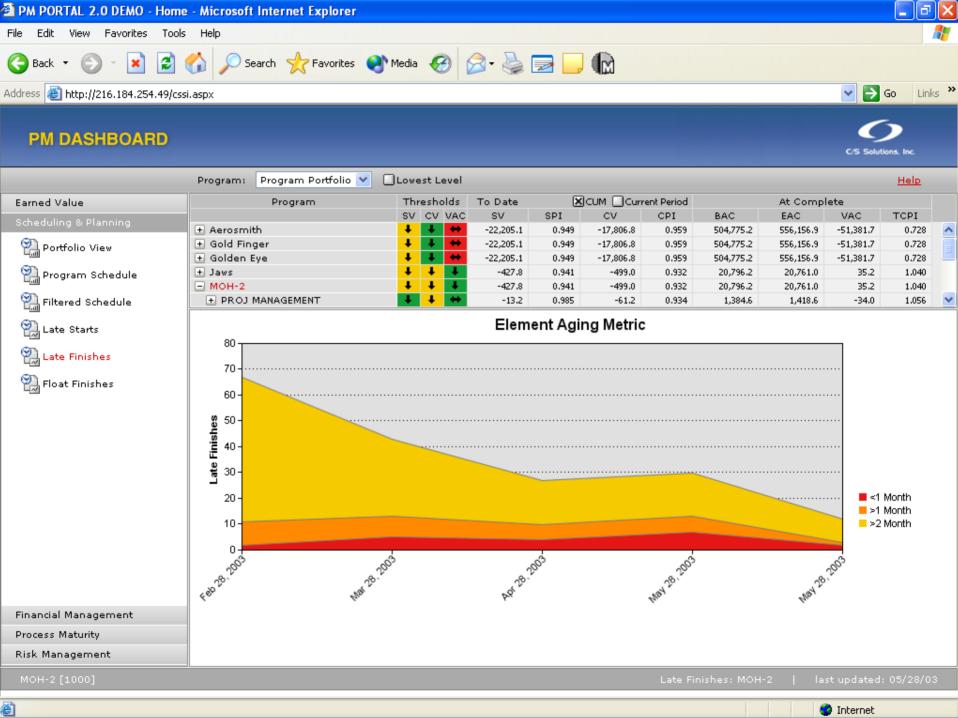
Technical Performance

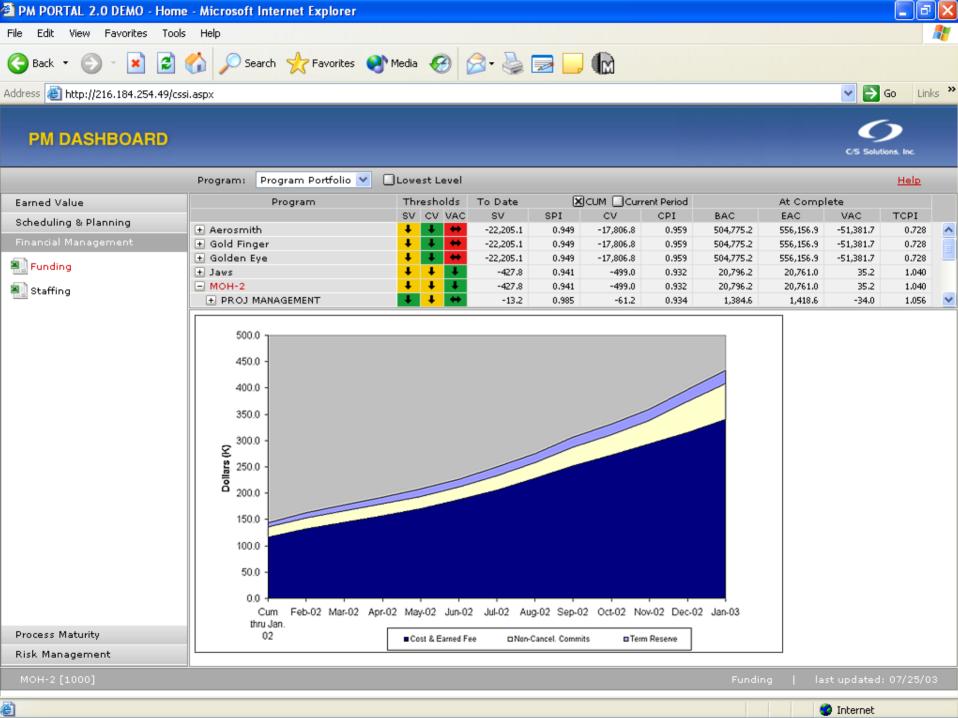
- Technical performance measurands identify & track key variables
- Metrics focus on major sources of instability

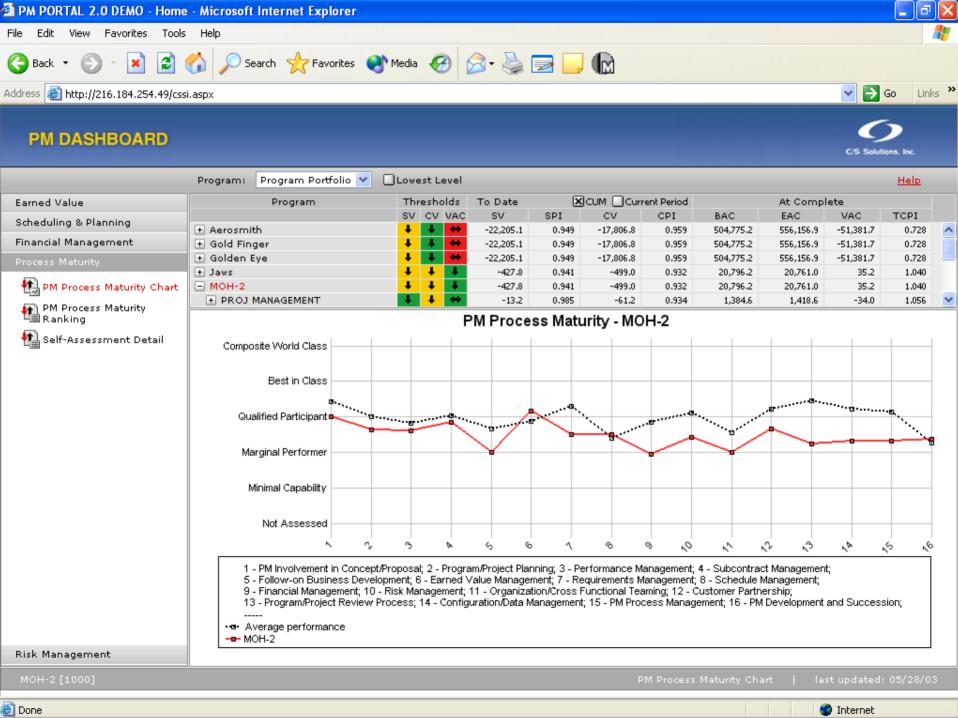
Portal Demo

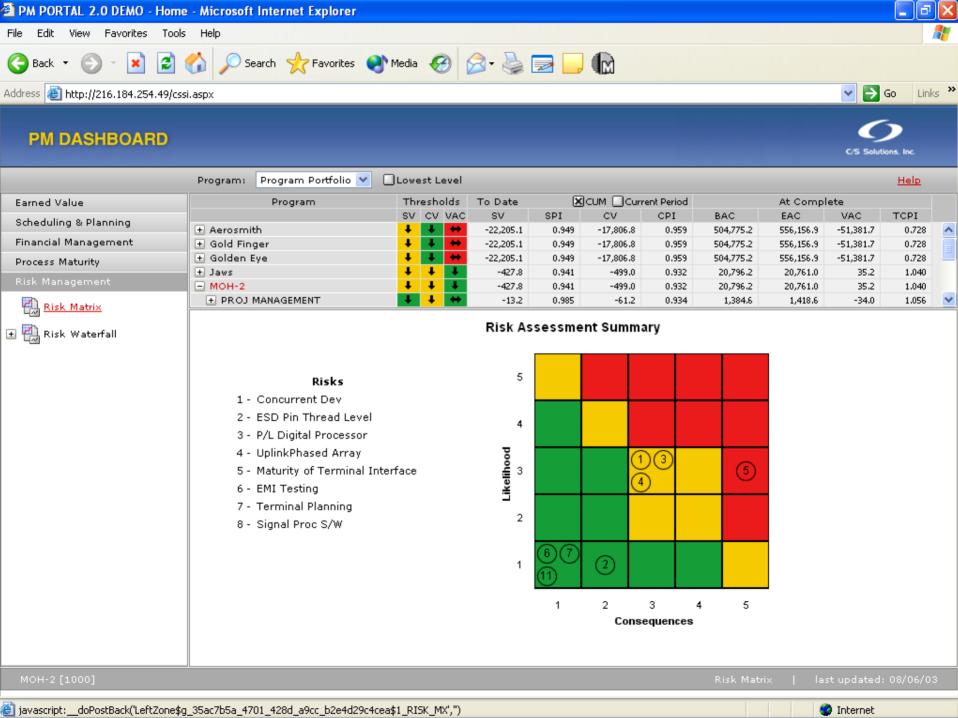


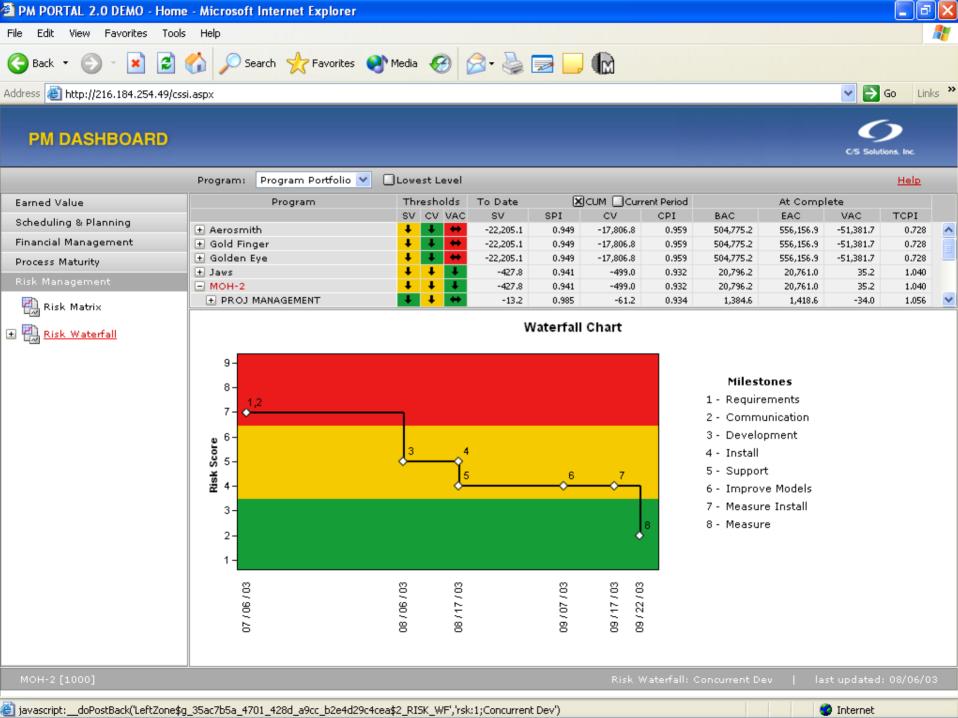












Cost and Charts

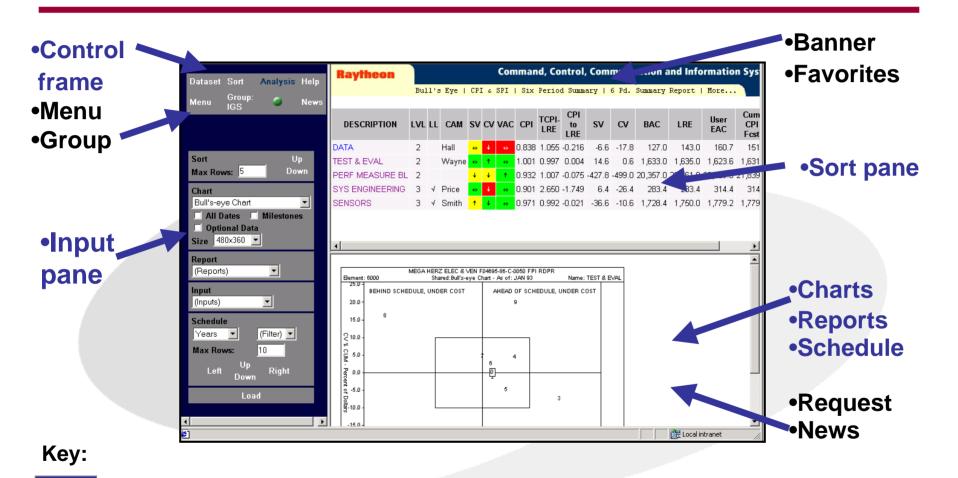


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WebEVR Main Page Layout





Integrated additional features with the COTS product. C/S Solutions, Inc.

Written by CS-Solutions

Written by Raytheon

LOCKHEED MARTIN

PowerPoint Disappoints

- PowerPoint Management Systems are a vicious cycle
 - Baseline systems atrophy when the data gets fixed in the chart
 - Updating charts becomes the de facto process rather than maintaining the baseline system
- PowerPoint prone to error and lacks objectivity
 - Hard to enforce presentation standards and consistently trend data for "look ahead" indicators
 - Currency of information always questionable
 - People make mistakes
- Modern Portal Technologies and XML promise practical alternative to once formidable problems
 C/S Solutions, Inc.

Columbia Accident Investigation Report

"As information gets passed up an organization hierarchy, from people who do analysis to mid-level managers to highlevel leadership, key explanations and supporting information is filtered out. In this context it is easy to understand how a senior manager might read this PowerPoint slide and not realize that it addresses a life threatening situation."

LOCKHEED MARTIN

Portal Success Prerequisites

- Consistent presentation of program performance
 - Facilitate executive portfolio apples-to-apples view
- Wide spectrum program adaptability and scalability
 - Significant cost and architecture considerations
- Organic grown from existing best practice tool infrastructure
 - "no artificial data sweeteners"
- Drive program management best practices
 - "Make it easier to do right"
 - Cleanse and strengthen baseline systems
 - Improved timeliness and resulting management value
 - Increased Data Validity and "Look Ahead" indicators
- Discretionary Perspective and Program Data Security
- Near zero additional adoption cost
- Customer & Sub-contractor friendly C/S Solutions, Inc.



Dashboard Audiences

Program Management Consumers

- Customers
- DCMA
- Corporate & Line of Business Executive Management

Program Management Performers

- Program Managers
- Cost Account Managers
- Subcontractors
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Dashboard Content Types

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- Other "web-enabled" program management systems

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- PowerPoint and other images
- Documents

Historically Derived

- Portal generated metrics
- Historically trended and plotted thru Portal Dataset queries
- "Mining and Cross-Referencing" PM Data



Web Service Benefits

- Consist Data Regardless of Interface Used to Display the Objects/Data
 - Zero Footprint Web Clients
 - Smart Web Clients
 - Web Based Data Collectors
 - Windows Desktop Tools
- Portal Server Software & Hardware Independent
- Implementation Partner Independent
- Integration with Other Legacy Systems Via Commercial Portals
- Reduced Training Cost, Users See wInsight Objects/Data in Common Web Site/Portal Integrated with other Information (TPM, Risk, Budget, Financial)

Our Strengths

- Key Relationships with PM Vendors
- Integration with Broad Base of PM Tools
- EDI Consolidation Features
- Relationships with Implementation Partners
- Maturity of Tools (COTS since 1994)
- Proven History on Major Programs
- Integration of Tools in DAU Courseware
- Architecture
 - Ability to Handle Very Large Data Sets
 - Zero Footprint Client
 - Tiered Security
 - XML Data Interchange
 - Web Services
 - Portal Integration
- Large Customer Base (Government & Industry)



Summary

- wInsight Provides a Powerful Tool to Support Sharing and Analysis of Performance Data
 - Desktop
 - Web-Centric
 - Commercial Portals
- Interfaces with Existing Program Management Tools
- Supports "Entry Level EV" from Schedule Based Systems up to ERP based EV
- Can be Quickly Implemented with Virtually Any Existing Project Management System
- Most Widely Used Analytical Tools for Earned Value, Schedule and Risk Management.
- Supports Web Viewing/Services

Backup Slides

Existing wInsight Web Samples

Lockheed Martin Space Sample



Program Management

Performance Portal Initiative

Mike Alford

Executive Staff - Programs

Space Systems Company

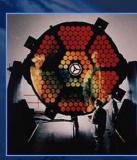
Lockheed Martin Space Systems



National Security

THAAD

Advanced Technology Center



LOCKHEED MARTIN

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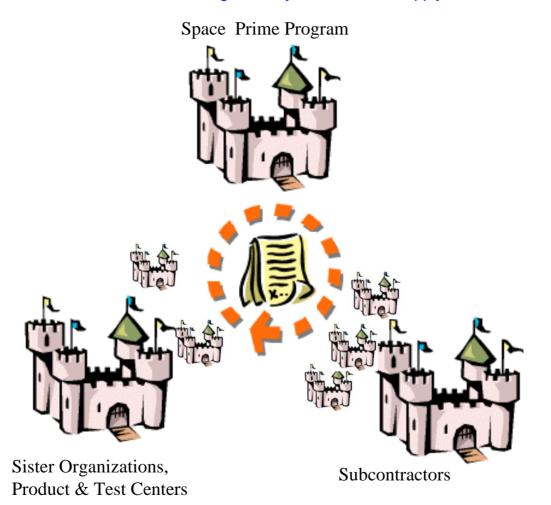
Formidable Challenges

- Wide spectrum of programs representing disconnected islands or "Fiefdoms" of performance data
- Lack of business process integration
 - Business applications are not connected
 - Processes are inefficient and plagued by human issues
- Sub-optimal collaboration with partners and suppliers
- Hard to change the way people work
 - Expensive to re-train end users
 - Risk averse culture resistant to IT and process change
- Legacy systems deeply rooted within many organizations
 - Significant resistance to application & systems improvements within executing programs
 - New Capture adoption strategy will not result in tangible process improvement
- Quickly Concluded that Tool standardization is a Red Herring
 - Holistic Processes and Data Liberation are only Solution



Fiefdoms of Program Performance

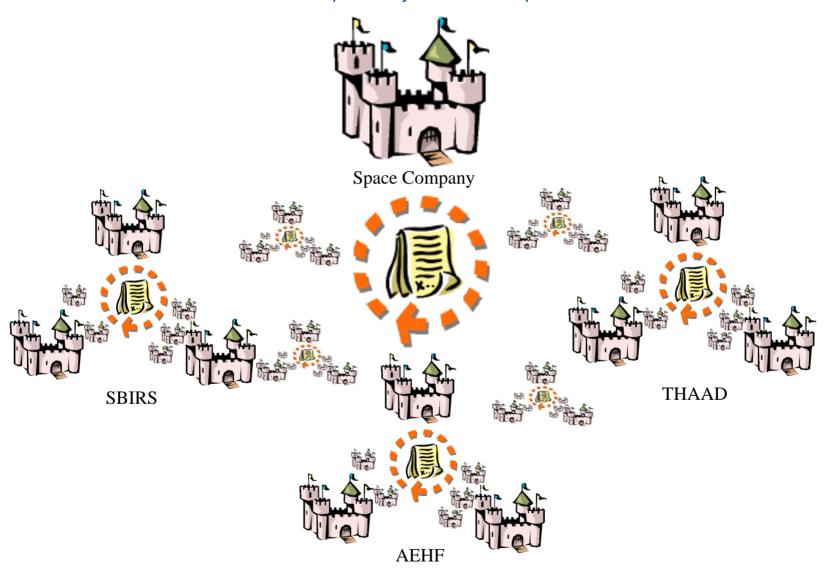
In its role as prime/systems integrator, Lockheed Martin Space has the role of having to integrate multiple program cost and schedule management systems from its supply chain



Significant delays in data summarization, system data duplication and transmittal processing procedures and analysis by business staff...

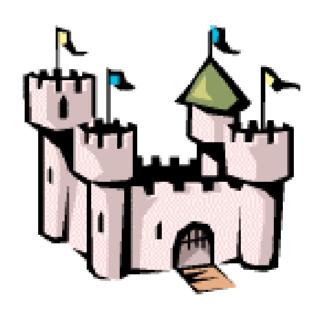


Fiefdoms of Program Performance Problem multiplied many fold at the enterprise level





New Perspective on PM Systems





New Perspective on PM Systems XML enables standard interfaces to Program Management Systems



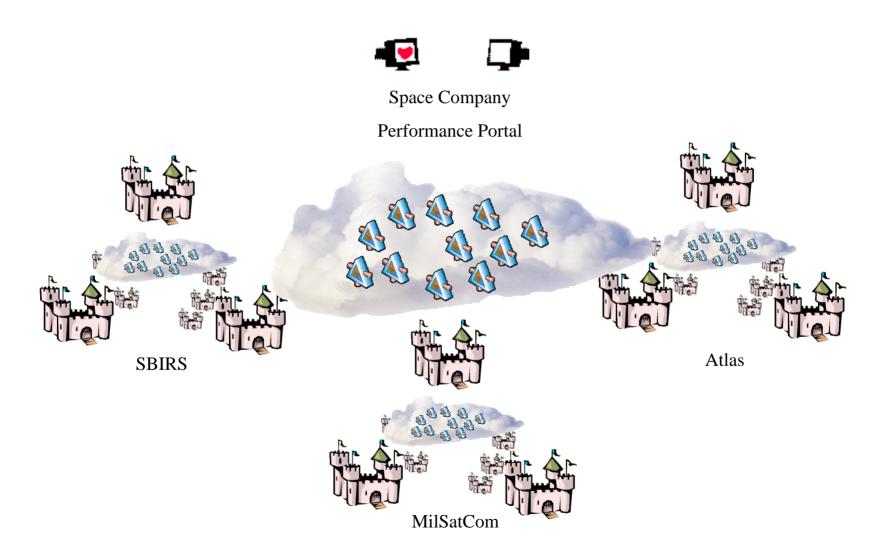


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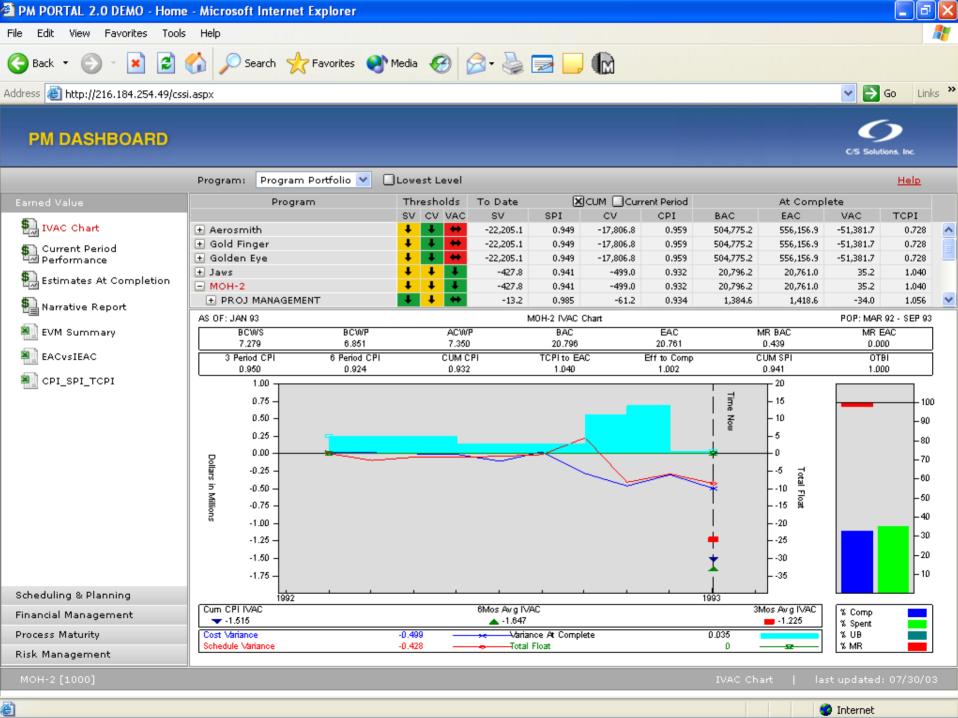


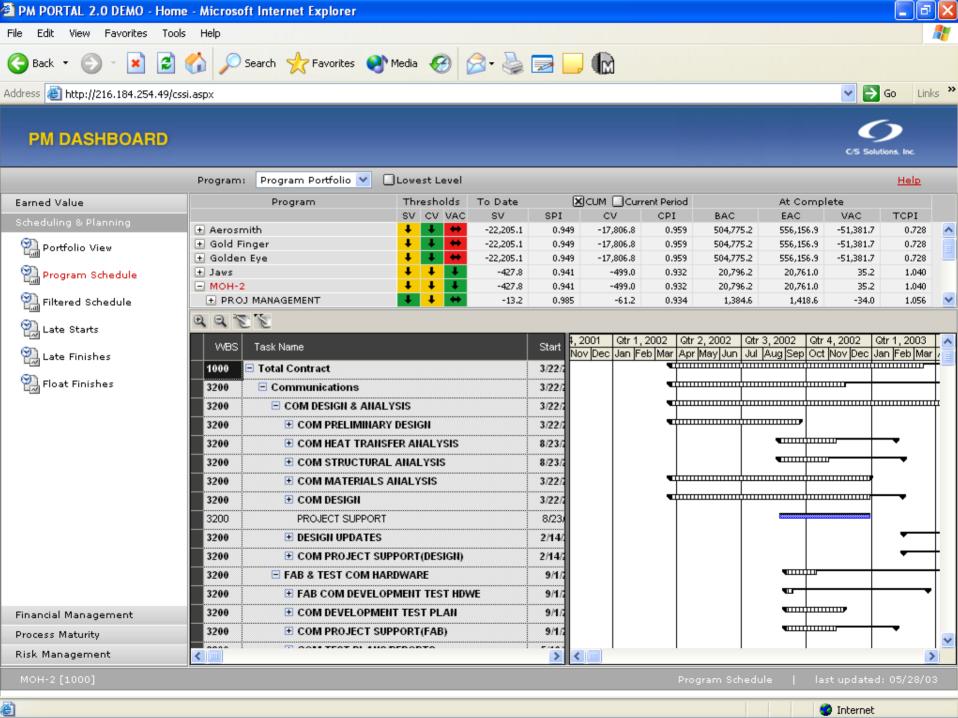
VISION: PM Process & Performance Data Liberation via XML & Web Services

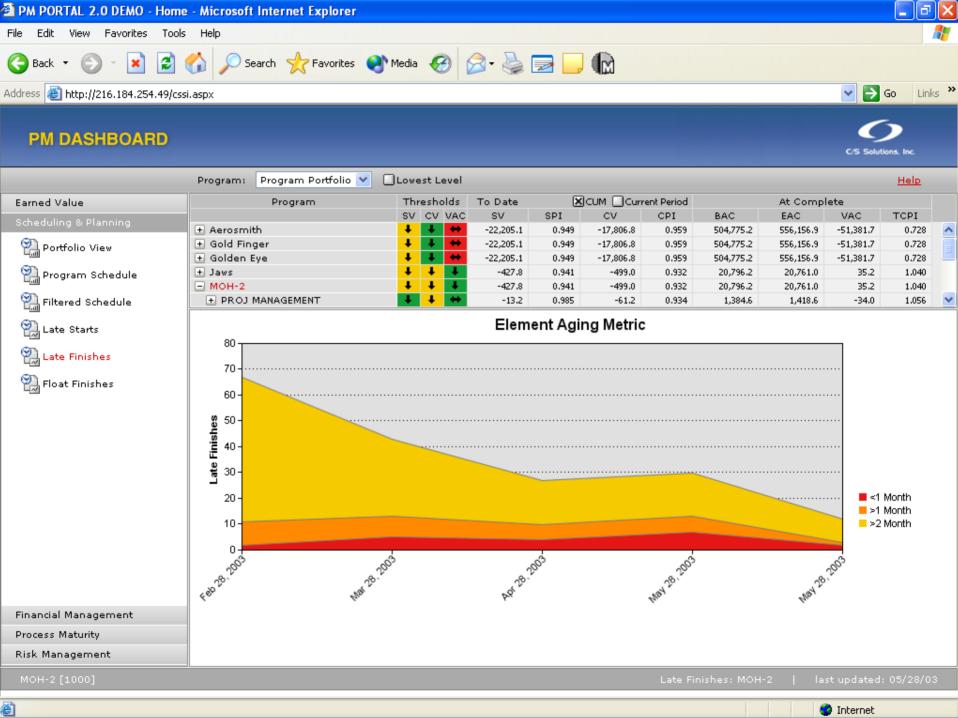


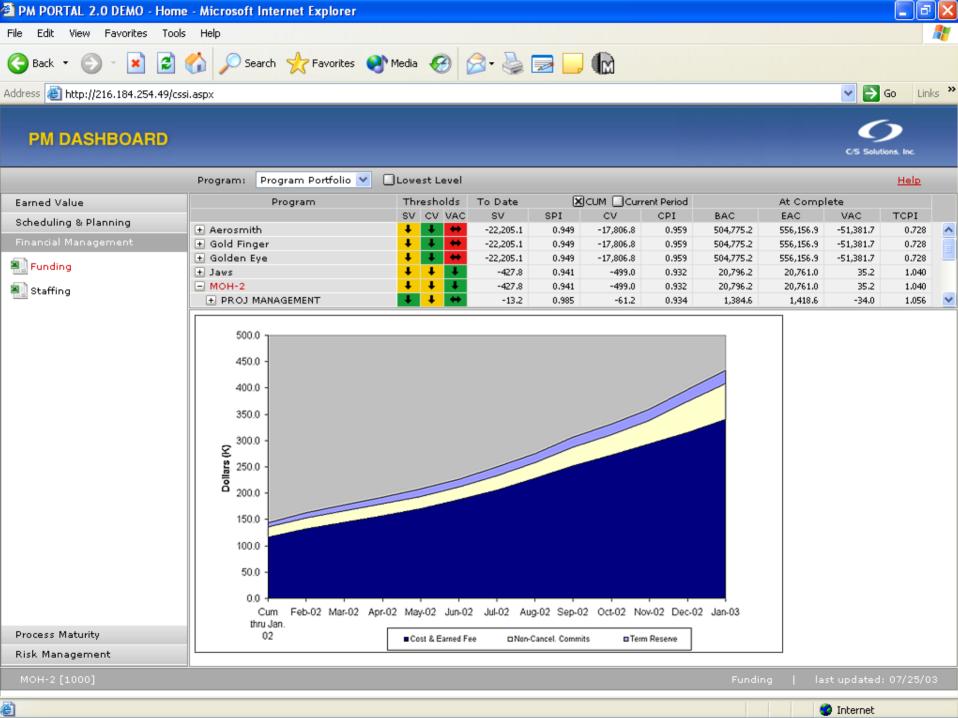


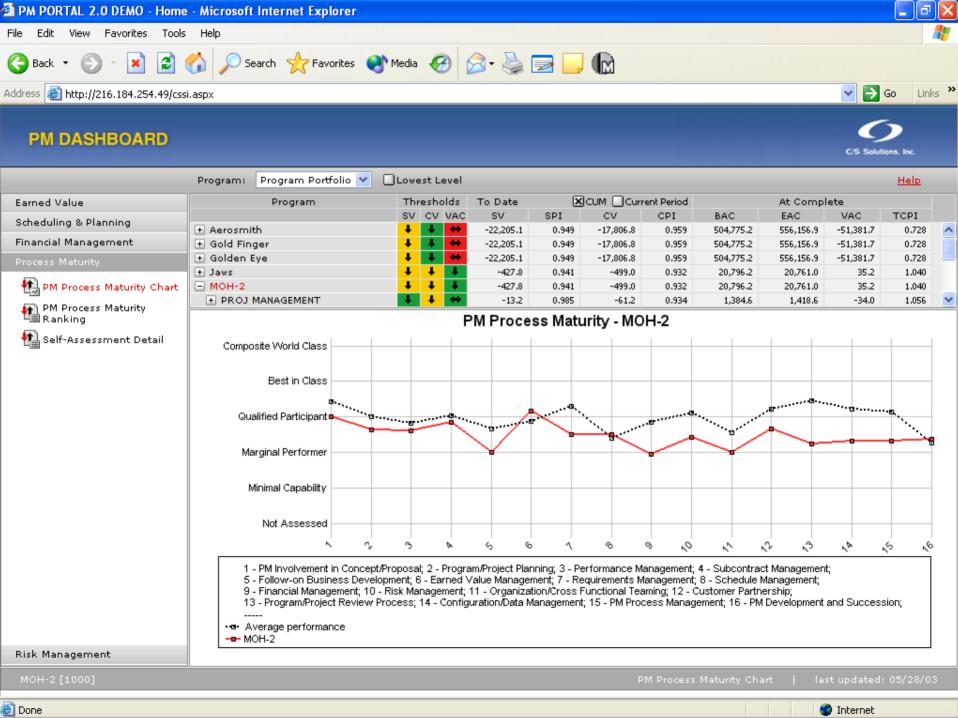
DEMO

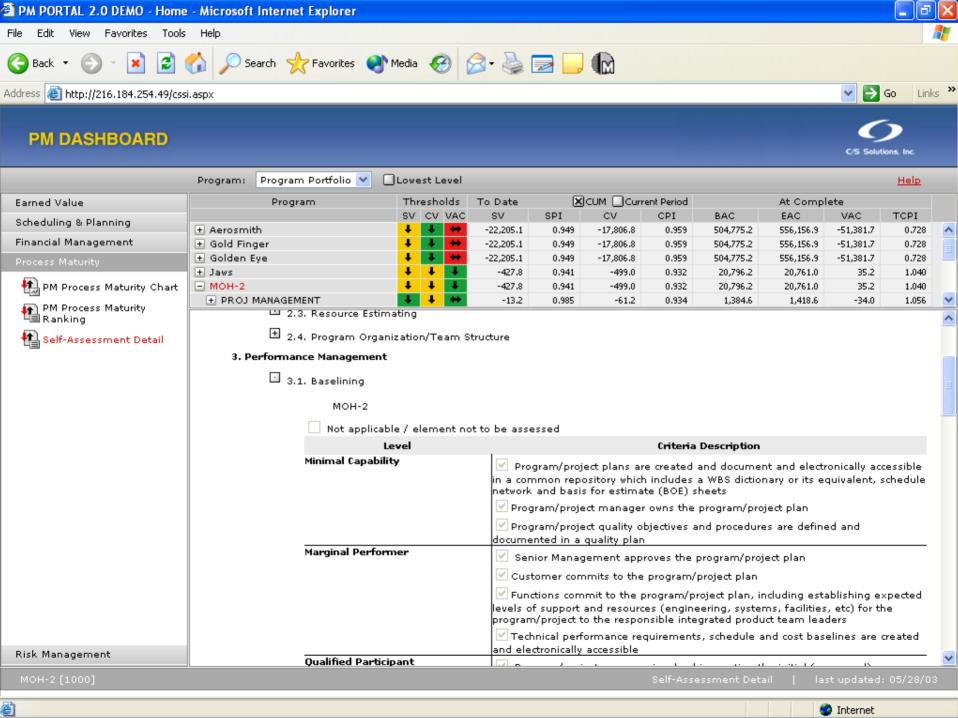


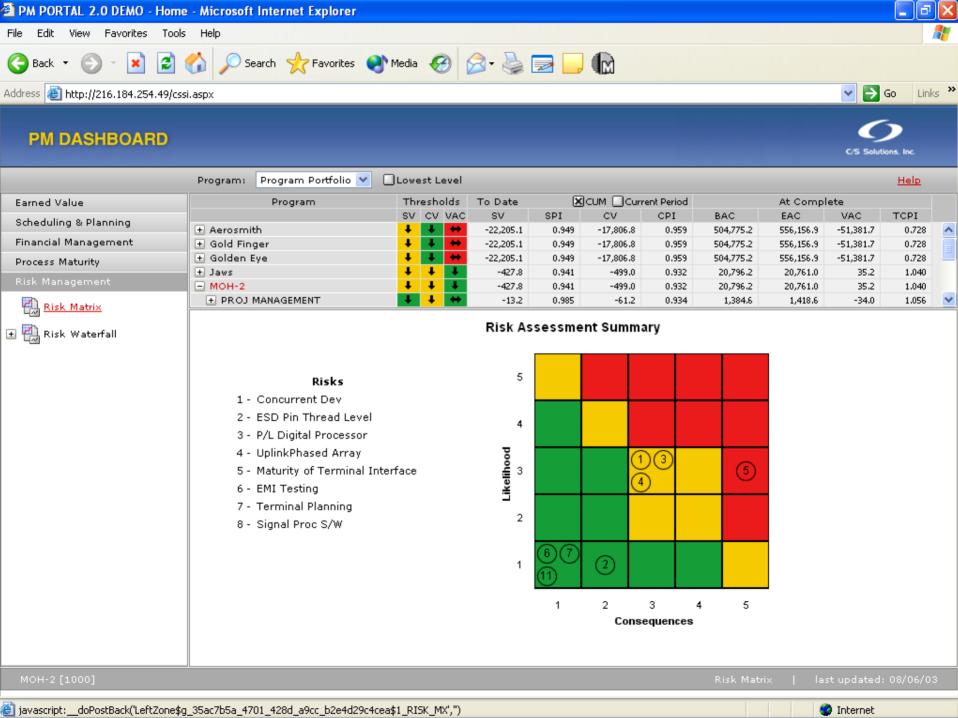


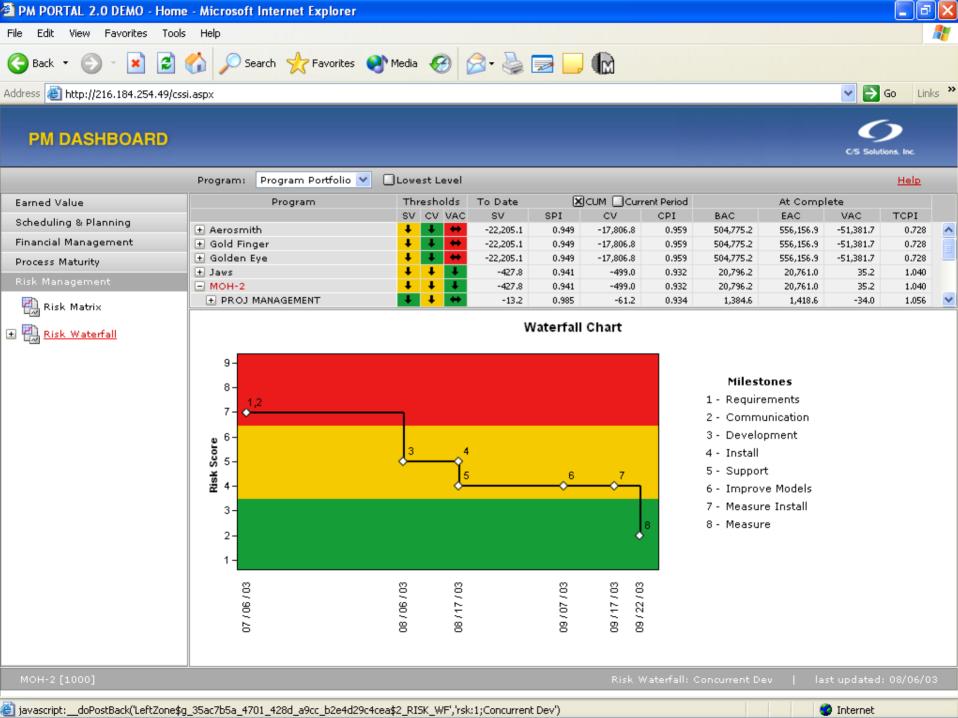














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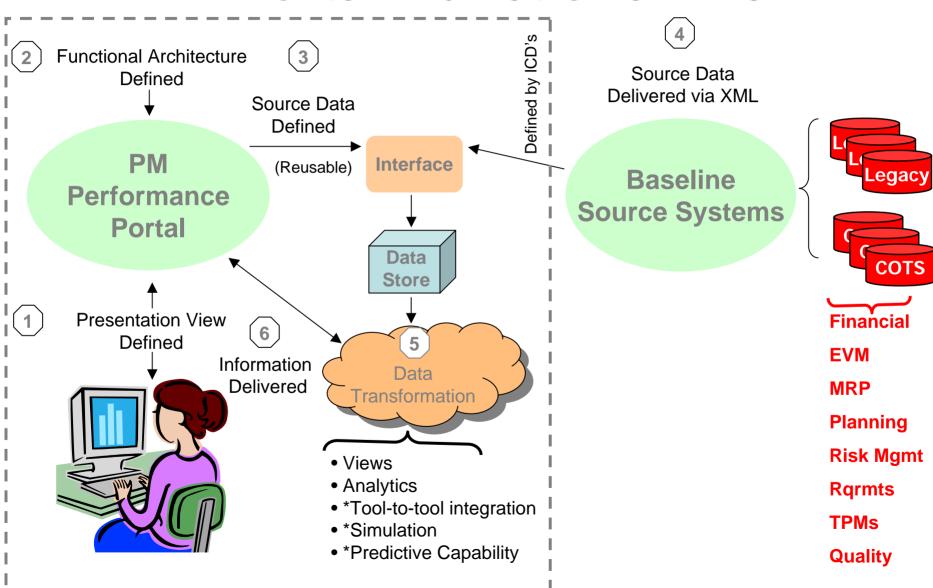
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Historically Derived

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PM Portal Functional View



PM Performance Portal Functional Content Hierarchy

Program Manager's Digital Environment

Project Management

- •IMP/IMS
- •SOW
- •WBS
- •Requirements
- Action Item Tracking
- Contract Documentation
- Risk Management

Metrics

•Technical Performance Measures

Predictive Measures

- •Intelligent Agents
- Simulation Modeling

Portal

- Visualization
- Single Sign-on
- •Role and Group Based Permissions
- •Team IPT

Financials

- •BOE
- •Earned Value
- Contract Status
- Resource Planning

Product Data Management

- •BOM
- •Parts Management
- Engineering Mgmt (Drawings...)
- Configuration Management

Corporate IT Infrastructure Services

- Collaboration Services
 - Conferencing
 - Video
 - Virtual
 - •Document Management
- Messaging Services
 - Email/Calendaring
 - Directory Services
- Network Services
 - Internal
 - External
- Security Services
 - Access Controls
- Help Desk
 - Call Handling
- Source Data Systems

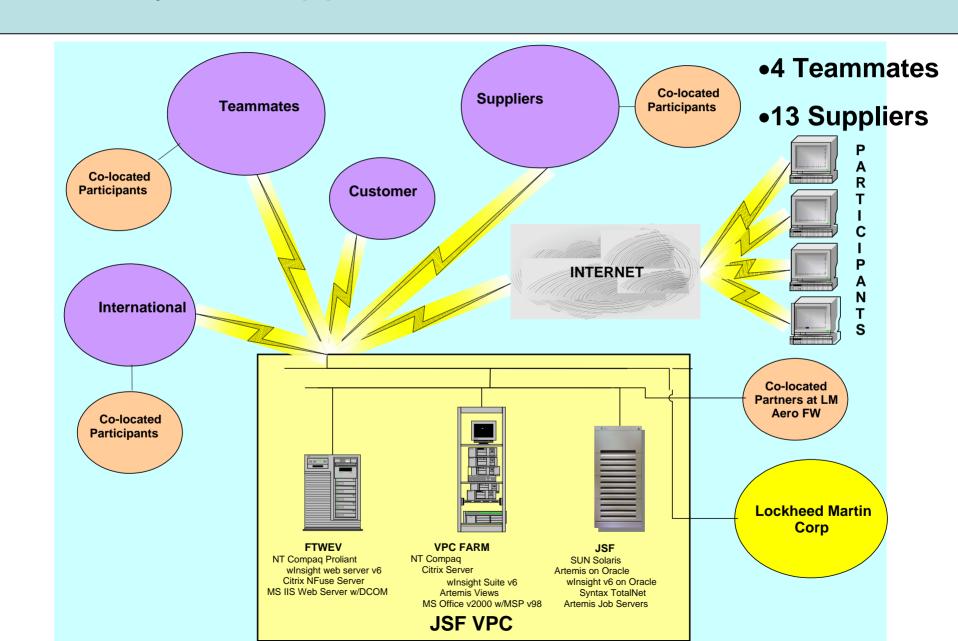
EVM: Backbone of Modern PM Portal

- WBS Discipline is key for "horizontal integration"
 - This is critical for creating "Eventing" between Portal webparts to synchronize data views cross-system
- Accounting roots makes EVM a fairly disciplined process which in most all cases has the most up to date and complete WBS within a Program's IT systems
- Within Program Managements systems EVM is one of the most widely accepted and clearly defined PM metrics
- wInsight is way ahead of the pack with their XML and web services architecture (great jumpstart to effort)

Lockheed Martin JSF Sample

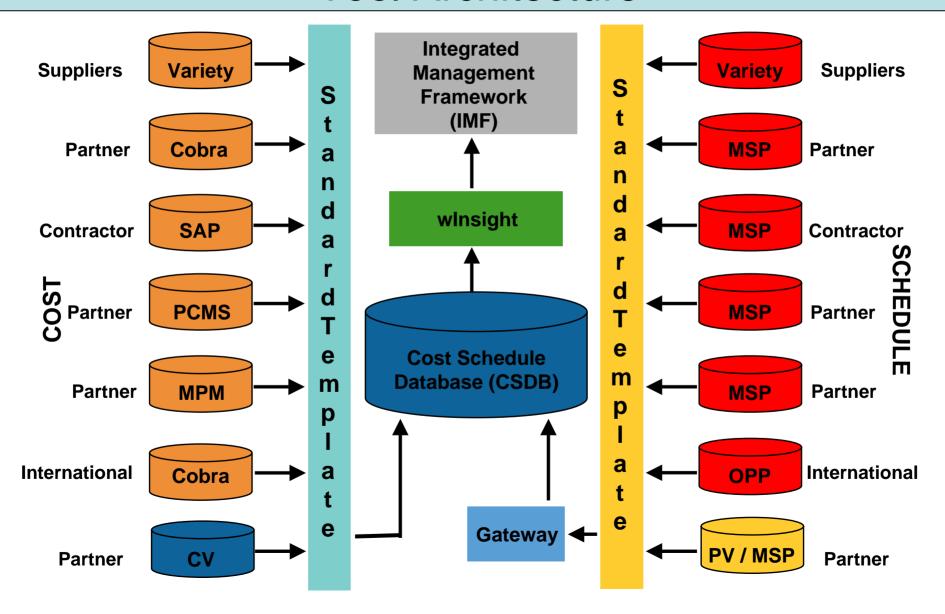
JSF Physical Application Architecture Model





Earned Value Management Tool Architecture



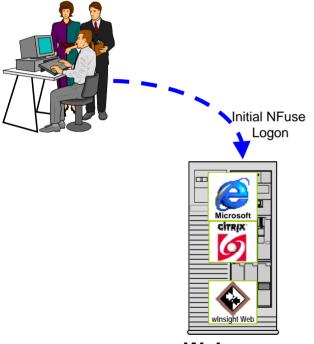


wInsight User Data Flow – All Programs Example



Two Ways to See EVMS Data:

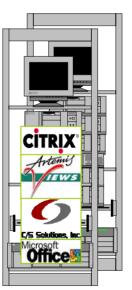
- 1. Full desktop access from any PC, MAC, or UNIX web browser with the NFuse plug-in and the Citrix ICA Client
- 2. winsight Web access only from any web browser



Webserver

NT 4 Compaq Proliant 6400R wlnsight web server v6 Citrix NFuse Server v1.5

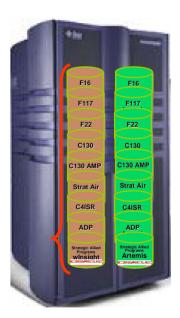
MS IIS v4 Web Server w/DCOM



Citrix server farm and a file server

NT 4TSE Compaq Proliant 6400R

Citrix Metaframe Server v1.8 wlnsight Suite v6 Artemis Views v4.15 MS Office v2000 w/MSP v98



Database server

SUN Solaris 8 E10000

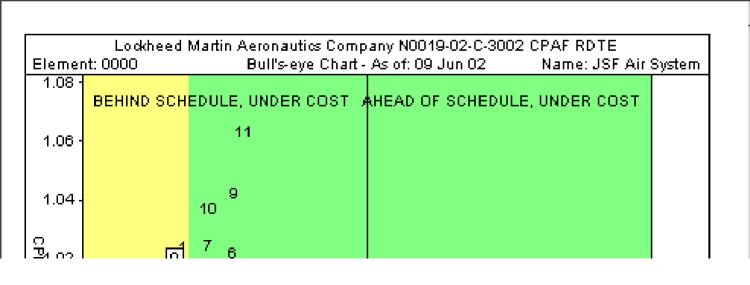
Artemis v4.15 on Oracle v7.3.4 wlnsight v6 on Oracle v8i Syntax TotalNet v6 Artemis Job Servers v4.15

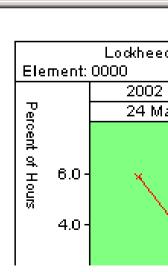
Cost and Charts



DB: Published Contract: SDDWK-T Structure: WBS As of Date: 3

-	WBS	DESCRIPTION	sv	CV	Var Req	BCWS	BCWP	ACWP	sv	SV%	SPI
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K S	▶ 1 000	Drill Down	=	٧	scSV	1,318,083.1	1,226,910.6	1,190,605.2	-91,172.5	-6.92	0.931
•	▶ 2000	r atonomio EogiS	=	٧	С	112,734.5	107,702.1	101,923.0	-5,032.4	-4.46	0.955
	▶ 4000	Air System Life	=	=		899.6	899.6	1,092.0	0.0	0.00	1.000
	▶ 5000	Systems Enginee	=	Α	S	186 478 4	176 885 8	173 039 5	-9 592 A	-5 14	n 949
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Cost and Schedule



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K S	▶ 1111FVV0201030301	AVSE RWP	SRR	=	٧	С	2,894.0	2,894.0	2,775.0	0.0	0.00	1.000	11
9	▶ 1111FVV0403010102	AVSE RWP	PDR	V	A		3,836.0	4,138.8	3,942.0	302.8	7.89	1.079	19
	▶ 1111FVV05030101	AVSE RWP	CDR-1				0.0	0.0	0.0	0.0	0.00	0.000	
	▶ 1111FVV0601010501	AVSE RWP	Alt En				0.0	0.0	0.0	0.0	0.00	0.000	
	▶ 1111FVV07030101	AVSE RWP	CDR-2				0.0	0.0	0.0	0.0	0.00	0.000	
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>	JSF5J1-1110-FW.1110P-3	<mark>07H</mark> LM Block	k 0.3 E										

> JSF5J1-1110-FW.1110P-307F LM Block 3 Fir

Control Account Plan

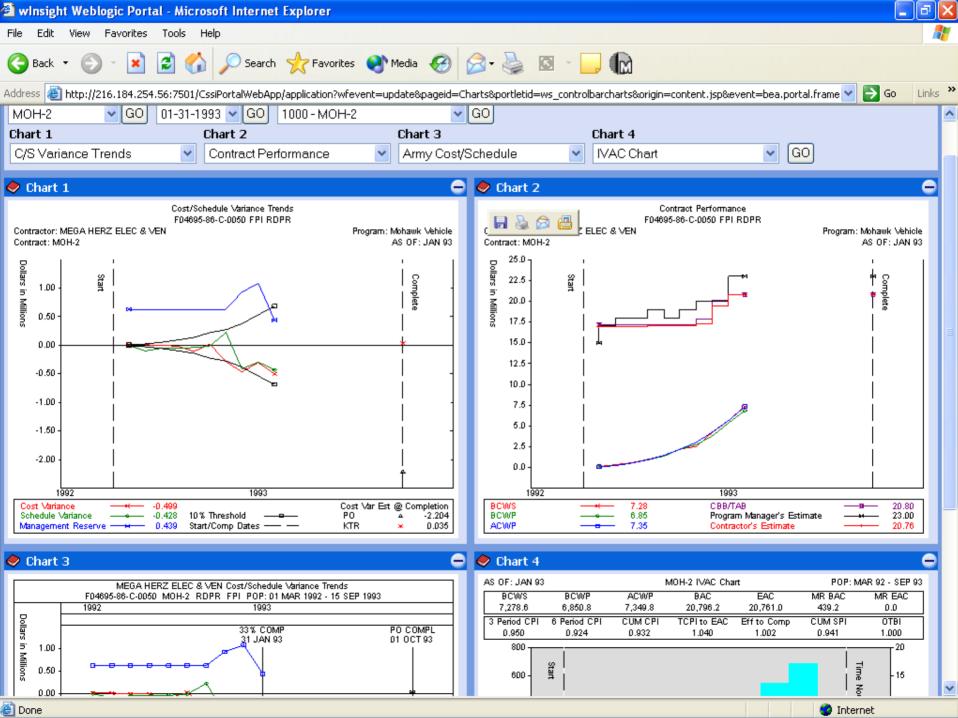


DB: Published Contract			t: SDDWK-T				Stru	As of Date: J		
Monthly CtrlAccnt Plan	L I		DESCRIPTION	ON	sv	cv	Var Req	BCWS	BCWP	ACWP
Related IPT	N	1030301	AVSE RWP	SRR	=	=		2,487.0	2,487.0	1,903.0
Related OBS Related IMP		3010102	AVSE RWP	PDR	A	=		2,809.0	3,111.8	2,980.0
	S	30101	AVSE RWP	CDR-1				0.0	0.0	0.0
▶ 1111FW0	<u> </u>	01010501	AVSE RWP	Alt En				0.0	0.0	0.0
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>	JSF5J1-1110-NG.1110-11	NG Update RW	Ш
>	JSF5J1-1110-FW.1110P-307E	LM Tier III toTie	Ш
>	JSF5J1-1110-FW.1110P-313E	NG Tier III toTi∈	-11
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WebLogic J2EE Sample

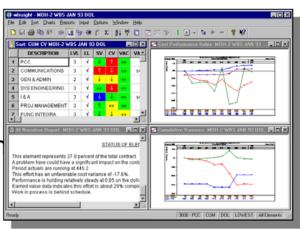


Pratt Whitney Sample



Project Objectives

- A "Performance Dashboard"
- Simplify adoption of EVMS on Commercial Engine programs while standardizing EV reporting on all programs
- Reduce problems/complaints with multiple syster and paper-based reporting
- Simple, consistent output format
- Quick and easy to interpret
 - Visually-oriented data
 - Traffic-light reporting
 - Variance thresholds and exception reporting
 - Trend charts on all EV metrics
- Want to look at the data in much the same way as customer
- CPR, C/SSR and many other reports
- Accommodates weekly EV reporting and performance assessment











All data in
Business
Warehouse and
winsight is
extracted
from SAP

Task plans/schedules

Resource Requirements

Operational reporting

Actuals, with drill-down capability

EVMS data

wInsight

EVMS Reports Customer Reporting

	WBS	DESCRIPTION	LVL	LL	sv	CV	VAC	VAR	BAC	%C	CPI	sv	cv	VAC
1	3200	COMMUNICATIO	3	√	1	↓	\leftrightarrow	sc	2,043	34.6	0.844	-203.	-130.	-87.0
2	3700	DATA DISPLAY	3	√	↑	\leftrightarrow	\leftrightarrow	S	388.0	41.1	1.000	-113.	0.0	0.0
3	3300	AUX EQUIP	3	√	\downarrow	\	↓	sc	2,418	27.5	1.133	-93.2	78.2	8.4
4	G&A	GEN & ADMIN	2	√	\	\	\leftrightarrow		1,850	33.6	0.932	-39.(-45.2	-36.8
5	3100	SENSORS	3	√	1	↓	\leftrightarrow		1,728	20.8	0.971	-36.6	-10.€	-21.6
6	2100	PROJ MANAGEN	3	√	1	\leftrightarrow	\leftrightarrow		618.	45.7	0.942	-12.0	-17.4	-3.2
7	3600	PCC	3	√	\downarrow	↑	\leftrightarrow		5,800	28.9	0.850	-11.4	-296.	-187.
8	3400	ADPE	3	√	\downarrow	\	\leftrightarrow	С	599.	41.8	1.053	-10.2	12.€	4.6
9	2300	FUNC INTEGRA	3	√	\downarrow	↓	\leftrightarrow		482.8	71.6	0.952	-7.€	-17.4	-30.8

Business Warehouse

Manpower

Cross-program Reports

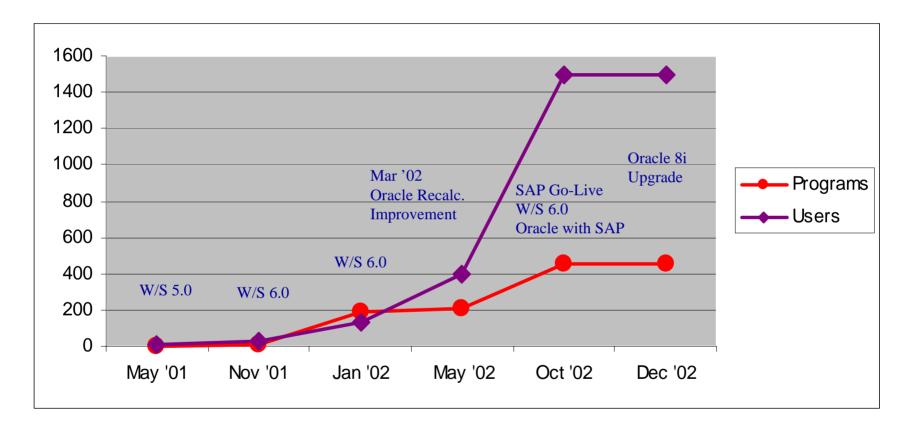
Queries







Project Growth



	May '01	Nov '01	Jan '02	May '02	Oct '02
Programs	<5	<10	<200	>200	>450
Users	<10	<25	150	>400	>1500

Raytheon Sample



WebEVR Background

- Raytheon Company profile:
 - 79,000 employees worldwide \$16.9 billion in net sales for 2001
- Command, Control, Communication & Information (C³I) Systems is one of 12 business segments in Raytheon. C³I is organized into three major business units and a US/French joint venture.
 - Command, Control and Communication Systems, headquartered in Marlborough, Massachusetts;
 - Imagery and Geospatial Systems, headquartered in Garland, Texas;
 - Strategic Systems, headquartered in Falls Church, Virginia;
 - Thales Raytheon Systems US, headquartered in Fullerton, California.
- C³l profile:

20,000 employees \$4 billion in net sales for 2001 hundreds of individual programs

Diversified core businesses spread throughout the country.

WebEVR Project Overview

We enhanced a COTS web package with additional capabilities to create an enterprise-wide Earned Value reporting solution.

- <u>Accessibility</u>: Provide access to wInsight Analysis tool, "Free" and on the web, for programs across C³I.
- <u>Efficiency</u>: Providing EVMS and schedule data in a more timely fashion to users, from engineering through senior management.
- <u>Security</u>: Provide each user with visibility to only those programs, organizations, and features appropriate to their work.
- <u>Empowerment</u>: Providing the user local control of loading data and customizing their "look and feel" of the data.

Provide a powerful product that addresses enterprise issues.

wInsight Web COTS Capabilities

The following features are included CS-Solutions' wInsight Web:

- Celebrated sort windows, reports, trend charts, and C/S Glue schedule correlation to any client running version 4.0 (or higher) of Internet Explorer or Netscape Navigator.
- Standard browser-based interface that supports Executive users,
 CAMP/IPT members and financial managers.
- Users can select projects, elements, charts, reports, a Gantt view of the schedule, and generate management by-exception sort windows for a single project or across multiple projects.
- Provides the capability to collect narrative feedback to explain what caused the problem, corrective action to be taken, and impact to the overall project.
- No software installation is required on the client computer.

CS-Solutions provided critical core functionality.

WebEVR Added Features Include

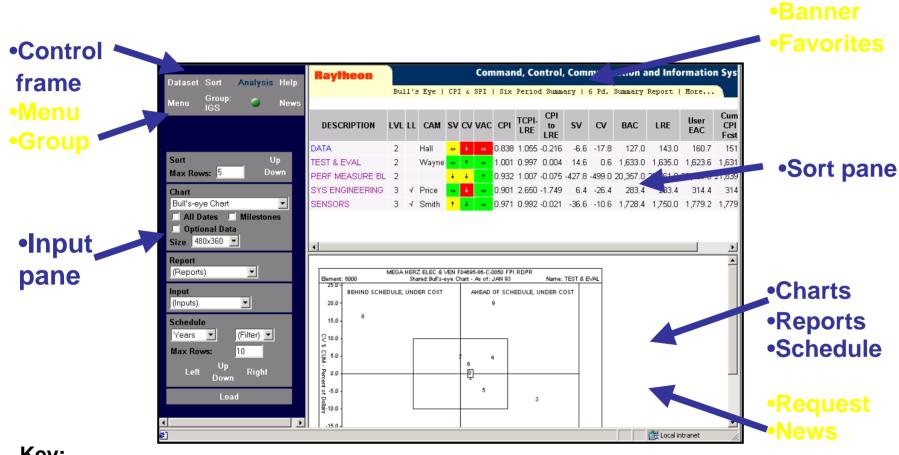
The following features are included in the proposed solution:

- WEB-based EVMS and schedule reporting across the enterprise
- User Favorites shortcuts to frequently used views & charts
- On-line user request and maintenance system
- Group programs according to the enterprise organizational structure
- Control level of detail that the user sees based on "need to know"
- Local control of views, filters, and charts
- "Current" EVMS data light indicator
- Link to pertinent EVMS web pages
- Automatic PowerPoint chart generation
- Local control of loading earned value & schedule data
- Drag-and-drop style of loading data

Developed solutions to address enterprise issues.

WebEVR Main Page Layout



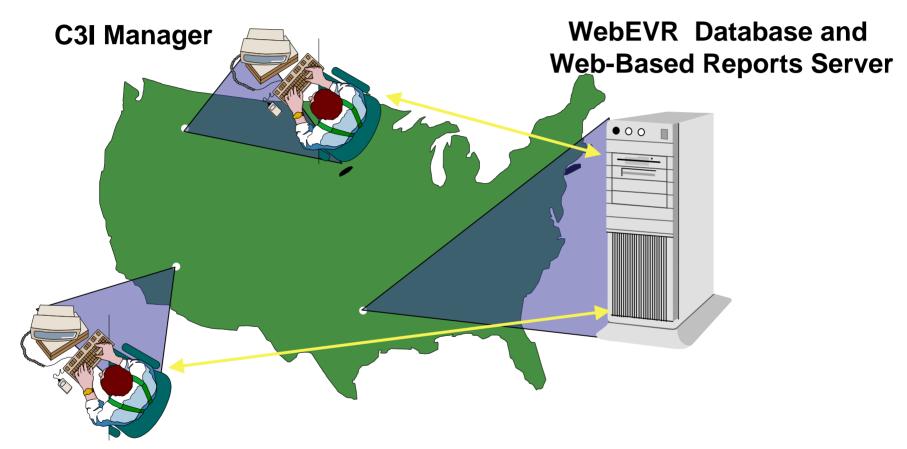


Key:

Written by CS-Solutions Written by Raytheon

Integrated additional features with the COTS product.

WebEVR Geographical View



Program Manager

Provide enterprise winsight analysis via internal WEB access, centralized data storage, and administration.

WebEVR Classes of Users

- Viewing User
 - Reviews and analyzes EV and schedule data via the web
 - Belongs to one or more groups
 - Has access to view one or more programs
- Data Loader
 - Responsible to load EV and schedule data for one or more programs
 - Retrieves presentation files
- Group Administrator
 - Establishes and maintains custom views, filters, and charts for one or more groups

Grouped related system responsibilities into logical user roles.

WebEVR Classes of Users (cont'd)

- Super User
 - An EV subject matter expert
 - Resource to help answer business and technical questions
- System Administrator
 - User with business focus (not IT person)
 - Define Users
 - Define Groups
 - Define Programs/Contracts
 - Assign Access rights
 - Assign Group Administrators
 - Assign Data Loaders
 - Set start of month
 - Set date for new News
 - Work Issues with users

Grouped related system responsibilities into logical user roles.

WebEVR Data Flow by User Class





EV & Schedule
Data

E-Mail Notification of success or failure

Unix Server Holds IFS and Oracle DB

Request PP slides

Slides e-mail back

Windows 2000 web server



IFS submits data to be loaded into the database

• 0 0 I

Group Admin



View & Filter Definitions

E-Mail
Notification of success or failure

Analysis Via the web **Viewing User**



WebEVR Group Organization



Business Seg	_							
(Level 1 only)			C3I				
Business Un (Levels 1 - 3		238	S	S	IG	S		
Business Are	ea							
(All levels)	SATC	ОМ	ATN	1S	MS	SIS	AIS	
Contracts								
	SMAR	RT-T	STA	RS	Exploitation	on System	MIND	
			ITW	IS	W	AS		
The purple	boxes ar	e	ADA	TS	CR	SS		
organizatio								
The white boxes are contracts.			SIV	AM US		IGS		
					Advanced	l Program		
			_					

Groups are designed with flexibility to meet the business needs.

Generic MS SharePoint Sample

